

Energy/Work

- Energy is the capacity to do work.
- Work is the product of a force and a displacement in line with each other.
- Work: *effort & movement.*

The Force/Distance Tradeoff--I

- The same quantity of work can occur with a large force for a small distance, or with a small force for a large distance.

$$F d = F d$$

The Force/Distance Tradeoff--II

- Therefore, you can multiply your force, ...
- ... but only by increasing your distance.

$$F d = F d$$

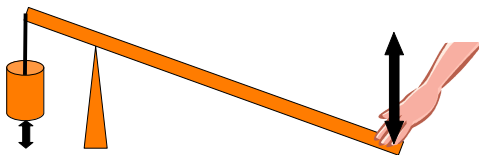
Lever Mechanical Advantage

- Ideal MA = $\frac{\text{input distance}}{\text{output distance}}$



Lever Mechanical Advantage

- Ideal MA = $\frac{\text{input distance}}{\text{output distance}}$



Lever Mechanical Advantage

- Ideal MA = $\frac{\text{input arm}}{\text{output arm}}$

